US DEPARTMENT OF AGRICULTURE
FOREST SERVICE

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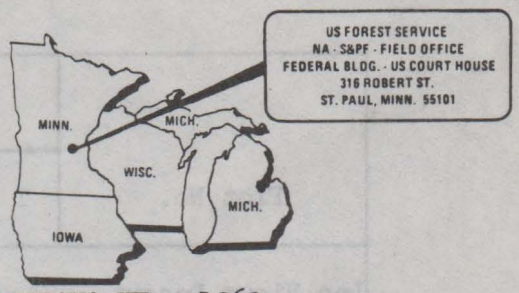
Northeastern Area
State & Private Forestry
DIVISION OF FOREST PEST CONTROL



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JACK-PINE BUDWORM EGG SURVEY ON THE OTTAWA NF - 1969

By Imants Millers

INTRODUCTION

The last outbreak of jack-pine budworm, Choristoneura pinus pinus Free., began in 1965 in the Baraga Plains. From there the budworm outbreak has spread throughout the northeast part of the forest. Another outbreak near Lac Vieux Desert has moved in from south of the State Boundary. An annual trend survey is made to observe budworm population fluctuations in order to develop methods for predicting severe outbreaks before damage has occurred.

METHODS

Eleven permanent plots are systematically scattered throughout the jack pine type of the Forest. Each plot is a jack pine stand at least 5 acres in size. Each sample consists of 4, 36 inch long branches (2 from mid-crown and 2 from lower-crown) taken from each of 10 dominant/co-dominant trees located in a cluster. The number of tips (current shoots) and the number of egg-masses and the degree of their parasitization was determined by a crew at Toumey Nursery. The average number of eggs per 100 tips was calculated with the assumption that an average egg-mass has 50 eggs. The egg numbers of parasitized egg-masses were reduced in proportion to the parasitization. Populations of more than 50 eggs per 100 tips are considered capable of causing severe damage, provided all budworms survive until pupation.

RESULTS

In general, budworm egg populations are declining from 1968 (Table I). The exceptions are plots 701 and 702, where considerably more eggs are present in 1969 than were in 1968. If all the larvae survived, severe defoliation would be likely in the vicinity of the 2 plots. However, past observations indicate that budworm populations decline in the spring after severe defoliation had occurred the previous year. For this reason, we do not expect severe damage in the 2 areas. Elsewhere, budworm populations are low and heavy defoliation is not expected.

Table I. The results of 1969 egg survey and population trends since 1967

Plot No.	Location			Number of eggs per 100 tips		
	T	R	S	1967	1968	1969
Lac Vieux Desert						
701	44	39	28	49	96	218
Central						
702	48	37	20	47	42	150
703	48	36	17	40	80	22
705	50	37	33	75	19	14
708	50	37	29	-	55	0
709	47	36	1	-	141	10
Baraga						
704	49	35	25	-	50	6
706	49	35	25	-	41	14
707	49	35	24	-	60	10
711 1/	49	34	19	512	15	5
710 1/	49	34	20	332	25	1

1/ The 1967 and 1968 data obtained from Dr. F. B. Knight, School of Forestry, University of Michigan.